



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/344,190 | 06/24/1999 | KENNETH SCOTT KUMP | 15-XZ-4971 | 8765 |

7590

01/30/2002

DEAN D SMALL
MCANDREW HELD & MALLOY LTD
34TH FLOOR
500 W MADISON STREET
CHICAGO, IL 60661

EXAMINER

CHOOBIN, BARRY

ART UNIT

PAPER NUMBER

2621

DATE MAILED: 01/30/2002

3

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/344,190

Applicant(s)
Kump

Examiner
Choobin Barry

Art Unit
2621



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirements.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2 20) ☐ Other:

Art Unit: 2621

DETAILED ACTION

Drawings

1. INFORMATION ON HOW TO EFFECT DRAWING CHANGES

2.. Correction of Informalities -- 37 CFR 1.85; 1097 O.G. 36

New formal drawings must be filed with the changes incorporated therein. The art unit number, application number (including series code) and number of drawing sheets should be written on the reverse side of the drawings. Applicant may delay filing of the new drawings until receipt of the "Notice of Allowability" (PTOL-37 or PTO-37). If delayed, the new drawings **MUST** be filed within the **THREE MONTH** shortened statutory period set for reply in the "Notice of Allowability" to avoid extension of time fees.

Extensions of time may be obtained under the provisions of 37 CFR 1.136(a) for filing the corrected drawings (but not for payment of the issue fee). The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

3. Corrections other than Informalities Noted by Draftsperson on form PTO-948.

Art Unit: 2621

All changes to the drawings, other than informalities noted by the Draftsperson, **MUST** be made in the same manner as above except that, normally, a highlighted (preferably red ink) sketch of the changes to be incorporated into the new drawings **MUST** be approved by the examiner before the application will be allowed. No changes will be permitted to be made, other than correction of informalities, unless the examiner has approved the proposed changes.

Timing of Corrections

Applicant is required to submit acceptable corrected drawings within the three month shortened statutory period set in the "Notice of Allowability" (PTO-37). Within that three month period, two weeks should be allowed for review of the new drawings by the Office. If a correction is determined to be unacceptable by the Office, applicant must arrange to have an acceptable correction re-submitted within the original three month period to avoid the necessity of obtaining an extension of time with extension fees. Therefore, applicant should file corrected drawings as soon as possible.

Failure to take corrective action within the set (or extended) period will result in

ABANDONMENT of the application.

Art Unit: 2621

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

5. Claims 1-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Ergun et al (U.S. Patent 6,298,109) .

As to claim 1, Ergun et al disclose a method for determining a dynamic range of a digital medical image for a medical imaging system, the digital medical image containing a clinical region, comprising:

determining whether the digital medical image includes a non-clinical region (column 2, lines 43-46 wherein control of the exposure of the imaged object based only on the portion of the image attenuated by the object is provided corresponding to non clinical image region); and calculating a dynamic range for a clinical region (column 4, lines 40-45, Fig.6 and column 7, lines 41-66 wherein the CCD 84 provides a complete set of radiation data for an entire image 86 (a frame) periodically once every "frame interval" so that real time image of a patient placed within X-ray beam 80 may be obtained, corresponding to calculating a dynamic region in this portion of claim).

As to claim 2, Ergun et al disclose dividing the digital medical image into bands of

Art Unit: 2621

predetermined width, said determining step identifying the non-clinical region in each band (column 10, lines 49-60 and Fig.12 wherein “a curve is selected from a number of possibilities so that equally wide bands of image pixel brightness and have equal amounts of image noise” corresponds to dividing the digital medical image into bands of predetermined width).

As to claim 3, Ergun et al disclose the digital medical image is divided into horizontal and vertical bands during the determining step (column 11, lines 13-32).

As to claim 4, Ergun et al disclose differentiating said digital medical image, said determining step calculating a position of the non clinical region based, on a result of said differentiation (column 11, lines 33-53 and Fig.9 and Fig.11).

As to claim 5, Ergun et al disclose calculating at least one threshold based on a dynamic range of the digital medical image, said at least one threshold being used to identify at least one of maximum and minimum values for the non-clinical region (column 11, lines 53-60 and column 12, line 59- column 13, line 3).

As to claim 6, Ergun et al disclose identifying step discriminates at least one of histogram maximum and minimum values for a non-clinical region based on at least one predetermined threshold (column 12, line 59 through column 13, line 3).

As to claims 7 and 8, Ergun et al disclose masking non-clinical regions based on at least one of gray scale maximum and minimum values for the non clinical region (column 11, lines 33-53).

Art Unit: 2621

As to claim 9, Ergun et al disclose generating a histogram of the digital medical image, said masking step masking gray scale levels from the histogram that exceed predetermined upper and lower thresholds (column 11, lines 33-53).

As to claim 11, Ergun et al disclose a medical diagnostic imaging system for controlling a dynamic range of a digital medical image to be displayed, the digital medical image including a clinical region and a non-clinical , comprising: a segmentation module identifying a non-clinical region of a digital medical image (column 2, lines 56-59 and Fig.7 wherein determining which portions of the image represent the image object corresponds to segmentation module); and a dynamic range module determining a dynamic range of a clinical region of the digital medical image once the non-clinical region is segmented (Fig.7).

As to claim 13, Ergun et al disclose segmentation module identifies a raw radiation region in the non-clinical region (column 11, lines 34-56 ,Fig.18 and column 13, lines 19-23).

As to claim 15, Ergun et al disclose segmentation module identifies non-clinical regions based on variations in gray scale levels of the digital medical image (column 11, lines 13-32 and Fig.13).

As to claims 17 and 18, Ergun et al disclose the segmentation module discriminates the non-clinical region based on at least one gray scale threshold value (column 11, lines 53-60 wherein thresholding process or subtraction disclosed in reference to background pixels).

Claims 10,12,14,16,19,20-23 are similarly analyzed and rejected.

Art Unit: 2621

OTHER PRIOR ART CITED

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 6222907 to Gordon et al is cited for Image quality optimization using an x-Ray model based optimization.

CONTACT INFORMATION

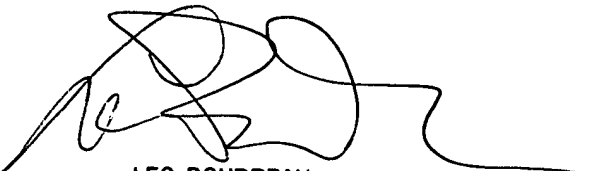
Any inquiry concerning this communication from the examiner should be directed to Barry Choobin whose telephone number is (703) 306-5787.

The examiner can normally be reached on Monday through Friday from 8:00 a.m. to 4:30 p.m. If attempts to reach examiner by telephone are unsuccessful, the examiner's supervisor, Leo Boudreau can be reached at (703) 305-4706.

Any response to this action should be mailed to: Commissioner of Patents and Trademarks Washington, D.C. 20231. or faxed to: (703) 872-9314, (for formal communications intended for entry), (703) 308-5397 (for informal or draft communications, please label "PROPOSED" or "DRAFT"). Hand delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 305-3900.

Barry Choobin
Patent Examiner
Group Art Unit 2621
January 19, 2002



LEO BOUDREAU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600